

manuscript name. In the three specimens before me, which are from Florida, the thorax is dark-brown on the disk with the side margins and apex more or less pale, the elytra dark testaceous, with suture and sides more or less brown; the front and middle tarsal claws are simple, the first interval is relatively coarsely and irregularly punctate and the clypeus is not as concave as in *semilivida* Lec.

Anomala tibialis, new species.

Larger, more robust and convex than *parvula* Burm., with more parallel elytra and hind tibiæ very short and triangularly dilated at apex. Head piceous, front paler, clypeus dark testaceous, coarsely and closely punctate; clypeus transverse, broadly rounded in front and narrowly reflexed. Antennæ moderate, club slightly shorter than the preceding five joints. Thorax more than twice as wide as long, sides narrowing to the front from before middle, nearly straight behind, hind angles rounded, front angles not prominent; disk convex, apical marginal bead nearly obsolete at middle, basal marginal bead distinct, surface testaceous with two oblique, dark, elongate markings at apex on each side of median line, the markings irregular in outline and slightly curved outward, sparsely not coarsely punctate, the punctures at sides and towards base nearly obsolete. Elytra elongate, parallel, testaceous, suture and margin dark, surface sculpture and striæ more or less obscured by transverse rugæ, the striæ at sides more distinct and coarsely punctate. Under side testaceous, shining, metasternum moderately densely clothed with long pale hairs, abdomen with moderate punctures, which are not closely placed. Front tibiæ bidentate, apical tooth elongate and slightly curved, the upper tooth sharp and prominent, the larger claw finely cleft, the upper and lower part equal in size; the larger claw of the intermediate tarsi finely cleft, the two parts equal in size; hind tibiæ very short and distinctly shorter than the femora and broadly dilated towards apex. Pygidium moderately punctate, punctures not deeply impressed. Length 10 mm., width 5 mm.

Texas, one female in collection Dietz.

By the unusually short and broadly dilated hind tibiæ this species is easily distinguished from all our species. It is very closely allied to the Mexican *rhizotrogoides* Blanch., but seems to differ from that species by the more parallel form and the elytral sculpture.

**HORN'S SYSTEMATISCHER INDEX DER
CICINDELIDEN.**

BY VICTOR E. SHELFORD,

CHICAGO, ILL.

By far the great majority of systematic papers (monographs and systematic lists) are written with respect to unnatural geographical

areas and as a result, usually without a comprehensive study of the group or groups concerned. Among American entomologists there is an especially strong tendency to practically stop at the southern boundary of the United States, although no barrier or faunistic discontinuity occurs in that region. While it will, no doubt, be generally admitted that a careful consideration of all evidence as to the point of origin, evolution, and dispersal of all groups is necessary for the building up of a natural system of classification, systematic papers which consider such questions are at least extremely rare. All of the above deficiencies are noticeable in former treatments of boreal American Cicindelidæ while the paper under consideration (Supplement * to Deutsche Entomologische Zeitschrift, II, 1905, 56 pp.) can be charged with none of them. It is the result of fifteen years of labor on the part of Dr. Walther Horn who has seen practically all the large collections of the world. The following are his conclusions regarding the Cicindelidæ (in broad sense):

The "Carabidæ stem" gave rise, in the Ethiopian tropics, to the first Cicindelidæ-like forms. These he calls the Protomantichoridæ; they were wingless insects (with elytra) most nearly related to two living South African families (of the Cicindelidæ in broad sense), viz.: (1) Platychilidæ, wingless forms with the usual type of elytra; (2) Palæomantichoridæ, wingless forms with fused elytra which turn under the sides of the abdomen. The Protomantichoridæ dispersed westward to America, pushed out to the north and south and after developing the Neomantichoridæ (*Omus*, *Amblychila*, *Pycnochila*) in the nearctic region, gave rise to the Prototetrachidæ, which inhabited the entire equatorial belt. Among these, complicated pilosity characters were later developed. Next forms became distinguishable by the development of two types of false pattern on the elytra; (1) brought about by partial loss of pigment, (2) by the development of a thicker pilosity in certain areas. The present predominating etched patterns are to be considered as the equivalent of such false patterns.

A wider step led to the production of the Protoeuryodidæ (*Euryoda*-*Odontochila*-*Cosmema*-like forms) which also inhabited the entire tropical region; a greater power of flight was developed among these. They gave rise to the *Cicindela* which constitute the young-

* Not sent to subscribers; can be obtained from the Deutsche Entomologische Gesellschaft, Berlin, for three mark.

est group of the Cicindelidæ. This genus is the result of a great amount of converging evolution, some forms having descended directly from the Protoeuryodidæ, many others having come indirectly as offspring of the Odontochilini, Dromicini and Theratidæ (families and subfamilies of the *Cicindela* in broad sense).

In the Holarctic region there are two northern tribes and two southern tribes of *Cicindela* concerning which the author presents the following hypotheses: The northern tribes arose in now warmer Africa during a cooler period; later the group separated into two parts, the smaller number moved southward to find a cooler climate and is now represented by *C. 4-guttata* Wdm. in South Africa; the greater number, however, moved northward and separated into two parts, one remaining in Eurasia and the other crossing over into North America. The two southern tribes arose in tropical America and part moved toward the south, possibly some representatives crossing over into the Australian region, while an equally large number moved northward, part remaining in the nearctic region and a part crossing over into Eurasia.

The *Cicindela* fauna of the Nearctic region is thus made up of: (1) The northern tribe or *purpurea-obscura* (*obscura-modesta*) group; frons broad and depressed, pilosity of head and prothorax erect: relatives, (a) the *soluta-hybrida-campestris* group in Eurasia, (b) the *4-guttata* group in South Africa. (2) The Southern tribe or *cupraceus* group; frons narrow, not depressed, pilosity of head and prothorax decumbent; relatives (a) the *nivea-ritsemæ* group in the Neotropical region, (b) possibly the *helmsi-dunedensis-sætigera* group in the Australian region, and (c) the *elegans-trisignata* group in Eurasia. (3) The forms that have migrated in from the Neotropical *argentata* group; head bald, pronotum hairy on sides and disc; *unipunctata* Fabr., *belfragei* Sallé, *pilatei* Guer., *cursitans* Lec., and *celeripes* Lec., forms not understood by a study of the species of the United States alone, belong here. (4) Forms belonging to the indigenous Mexican fauna; head bald, pronotum pilose at the sides only. Our common *sexguttata* belongs to this group.

A similar analysis is made of the *Cicindela* fauna of each geographical region, the boundary countries of which (for this genus) are especially named. Other genera apparently do not present faunistic discontinuities and hence are not so treated.

So much for our author's views. He has not (presumably on ac-

count of the nature of the paper) presented in detail the evidence in support of his theses and the reviewer is accordingly unable to give an analysis of the evidence upon which they rest. There is, however, much evidence that the Cicindelidæ originated in Africa, but their origin from wingless forms with elytra, I fear, will not meet the approval of insect morphologists. On the other hand, it is evident that *Tetracha* is in many of its characters a more primitive form than *Cicindela* and its distribution speaks well for the author's conclusions. His analysis of the nearctic *Cicindela* fauna and statement of its affinities must, it seems to me, stand unchallenged, while his arrangement of our species is the most tenable yet presented.

LITERATURE.

- TOWER, W. L., The Origin and Development of the Wings of Coleoptera. Zool. Jahrb., Mar., 1903.
 ORTMANN, A. E., The Geographical Distribution of Freshwater Decapods and its Bearing on Ancient Geography. Proc. Am. Phil. Soc., 1902, pp. 267-400.

Class I, HEXAPODA.

Order IV, DIPTERA.

ON THE KNOWN LARVÆ OF THE GENUS
URANOTÆNIA.

BY EVELYN G. MITCHELL,
 WASHINGTON, D. C.

The receipt during the past summer of larvæ of *Uranotenia sap-
 phirina* and *U. lowii* from Dr. T. W. Dupree gave an opportunity for a critical comparison of the three known larvæ of this genus, which had not previously been distinguished from each other. The genus, so far as can be judged by the known larvæ, is characterized as follows:

Four large stout spines bearing spinules instead of the usual four tufts in the middle of head; antennæ with a few scattered spines, the tuft represented by a single hair; stellate hairs on thorax and abdomen.

SYNOPSIS OF SPECIES

- I. Antennal tuft decidedly over one third distad; longest terminal spine if bent backward would reach below tuft. Scales on eighth segment of abdomen not fringed on apical one-third (reckoned from center of base to tip). Central tooth of labial plate bluntly rounded and widely separated from adjacent teeth.

U. lowii.